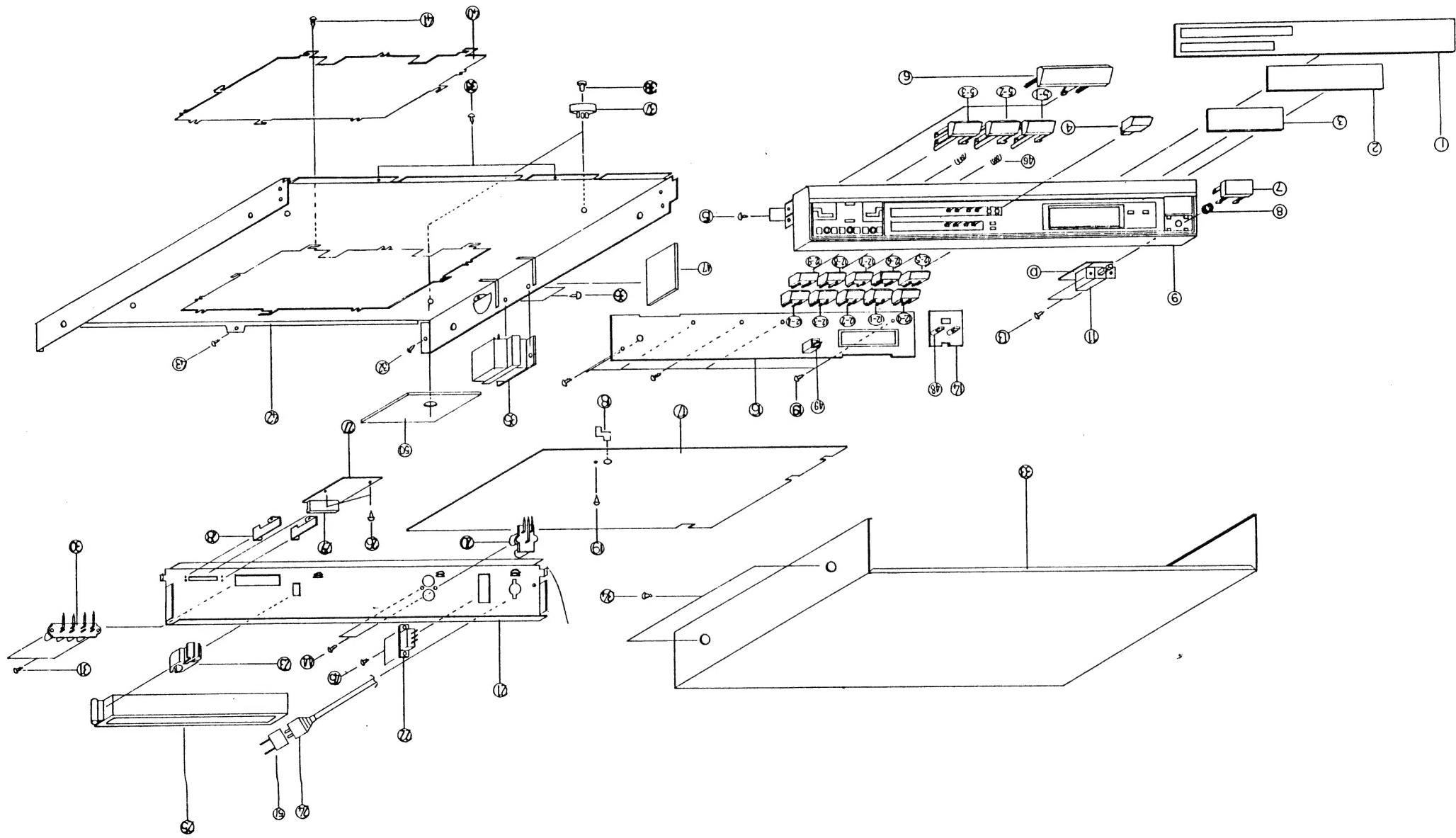
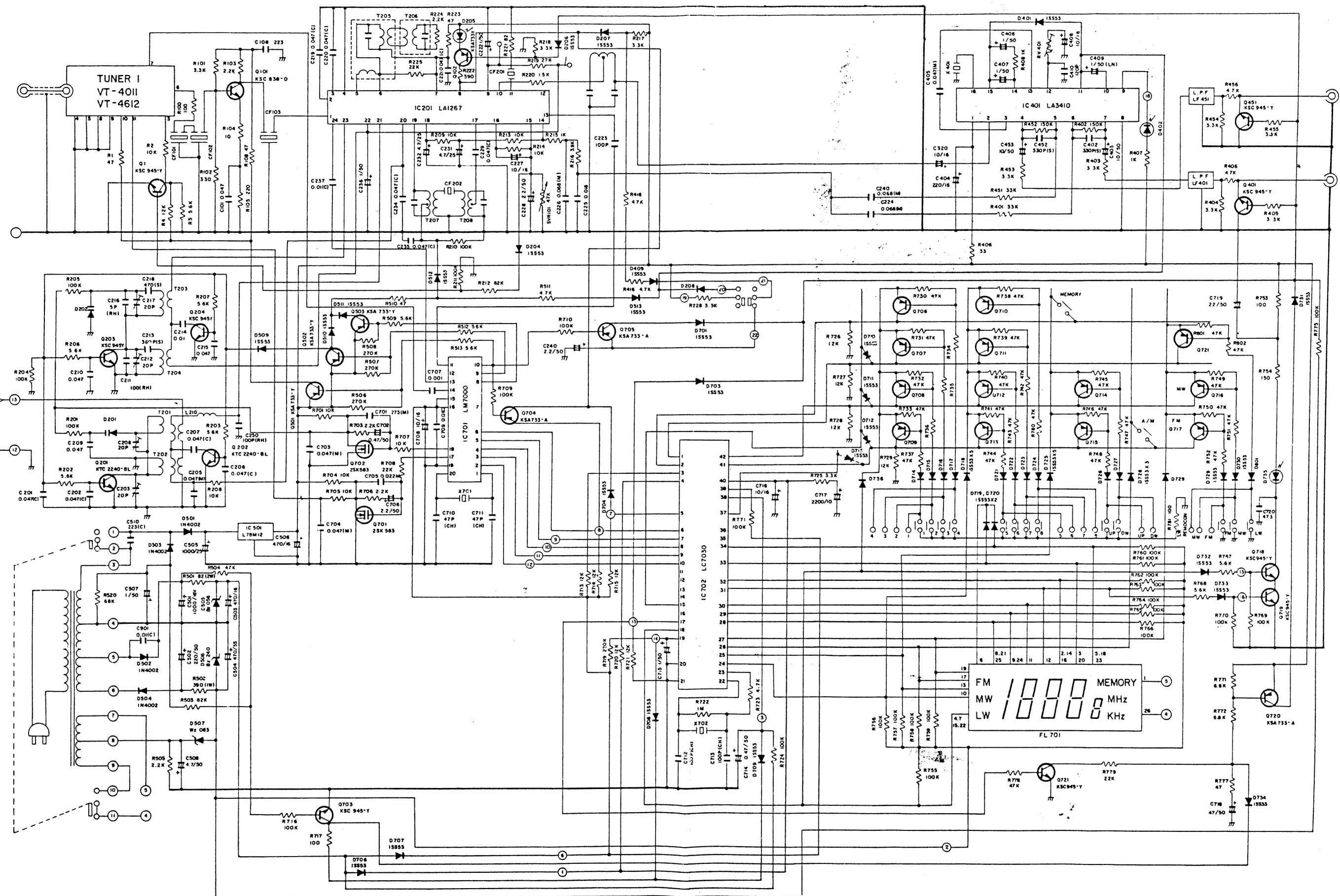


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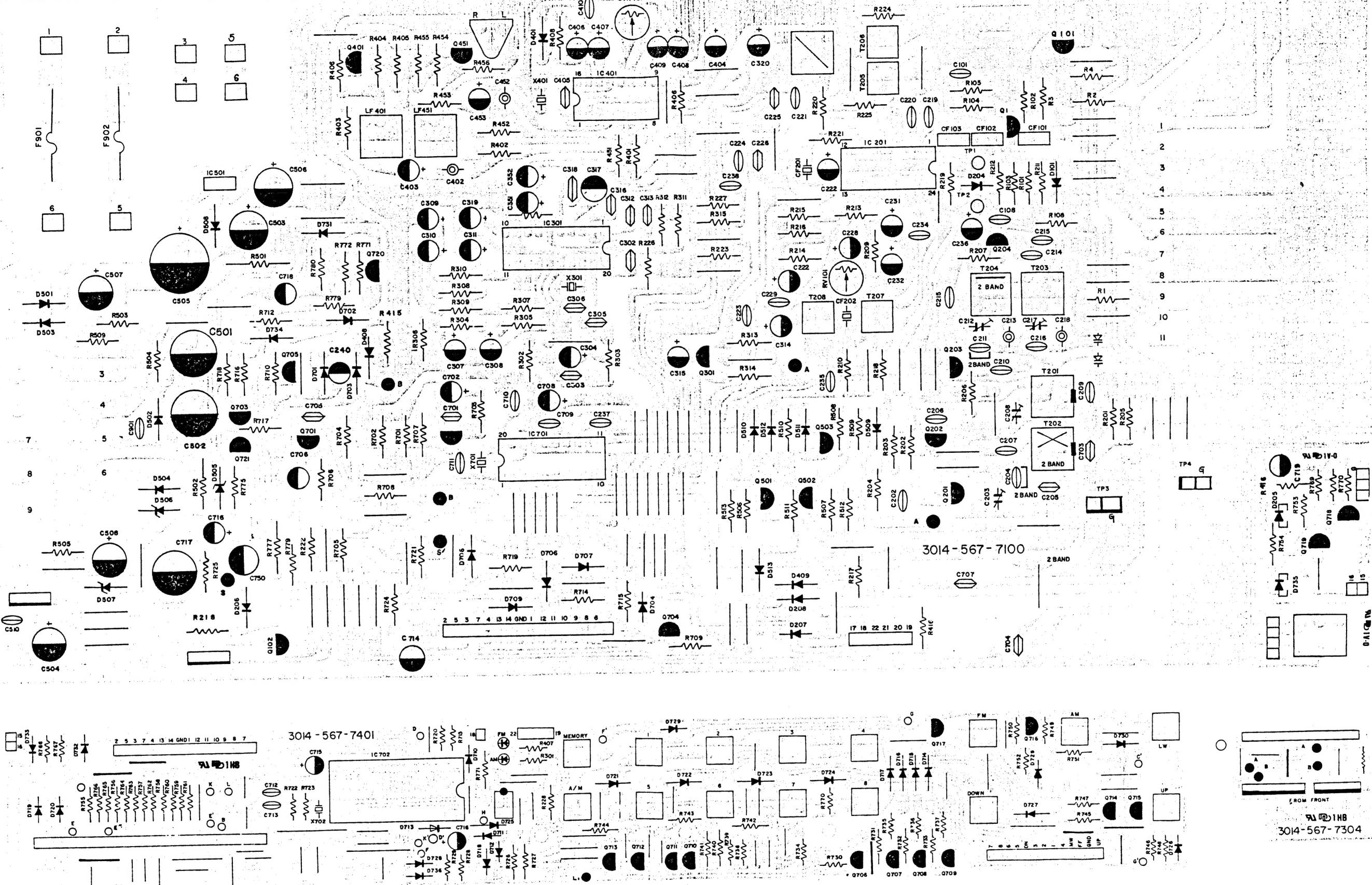
BESTELL-NR.	0698365
GERÄETEBEZEICHNUNG	UNIV.-PLL-TUNER
WARENGATTUNG	653
AUSFÜHRUNGS-NR.	001
GERÄETEBESCHREIBUNG	
PRIVILEGS	T 4682
LIEFERANTEN-NR.	205476
PREIS	198.00
KATALOG	882
GARANTIEZEIT	6
KD-SEKTOR	R
HEIM/BRINGE	WERKSTATT
BETREUUNG	EIGEN
KÖSTENTRÄGER	EIGEN
REPARATURFAEHIG	JA





## 7. CIRCUIT BOARD DIAGRAM

## AM/FM 2 BAND . LW/MW/FM 3 BAND COMMON



# 5. TRANSISTOR AND IC VOLTAGE

IC201 LA1267

1	2	3	4	5	6	7	8	9	10	11	12
2.2	2.2	2.2	0	11.2	11.2	11.2	9.6	3.8	3.0	1.5	0
1.1	1.1	1.1		11.3	11.3	11.3	10.4	3.5		1.4	
13	14	15	16	17	18	19	20	21	22	23	24
1.1	1.5	0.1	0.1	2.2	1.5	0	0	2.1	3.8	3.8	2.6
	1.6	0	0	1.1		11.4	2.0		3.6	3.6	1.5

IC401 LA3410

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	PIN NO
11.5	3.1	3.1	2.9	3.0	3.0	3.0	0	10.5	2.4	3.5	3.1	3.2	3.0	3.3	3.3	FM

IC701 LM7000

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.5	4.8	0	0	0	5.6	0	0.2	11.7	0.4	0.1	0.1	0.1	2.7	4.7	4.7	1.1	1.1	0	1.5

IC702 LC7030

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
0	0	4.7	4.8	4.7	5.6	0	0	0	4.8	0	4.8	0	4.8	-0.2	4.8	0	-20	4.6	0	0
					4.7								0			-2.5				
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42

2.5

2.6

-19

-19

-19

-19

-10

-10

-10

-10

-11

-10

-15

0

-24.1

-6.4

-10.3

2.0

TR	LOCATION NO.		Q1		Q101		Q102		Q401		Q451	
E	F	A	0.38	0	0	0	10.32	10.39	0	0	0	0
B	M	M	1.07	0	0.12	0.1	9.54	9.71	-3.06	-3.06	-3.06	-3.06
C			8.1	0	3.87	0	10.30	10.38	0	0	0	0

TR	Q501		Q502		Q701		Q703		Q704		Q705		Q706	
	12.05	12.05	12.05	12.05	3.35	5.25	0	0	5.56	4.69	4.5	9.68	1.8	1.8
B	11.27	11.74	11.74	11.31	0	0	-2.78	-2.78	8.98	11.62	3.8	11.63	1.8	1.8
C	11.99	0	0.01	12.04	1.11	1.08	11.75	11.75	9.62	10.38	4.4	-2.84	0	0

TR	Q707		Q708		Q709		Q710		Q711		Q712		Q713	
E	1.8	1.8	1.8	1.8	1.8	1.8	2	2	2	2	2	2	2	2
B	1.8	1.8	1.8	1.8	1.8	1.8	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TR	Q714		Q715		Q716		Q717		Q720		Q721	
E	1.93	1.93	1.93	1.93	1.96	1.96	1.96	1.96	12.07	12.07	0	0
B	1.92	1.92	1.92	1.92	1.95	1.95	1.95	1.95	12.06	12.06	0	-2.51
C	0	0	0	0	0	0	0	0	0.04	-2.84	12.02	12.02

3. AL

FM RF

STEP

1

2

3

4

5

6

MW LW

9

10

11

12

13

14

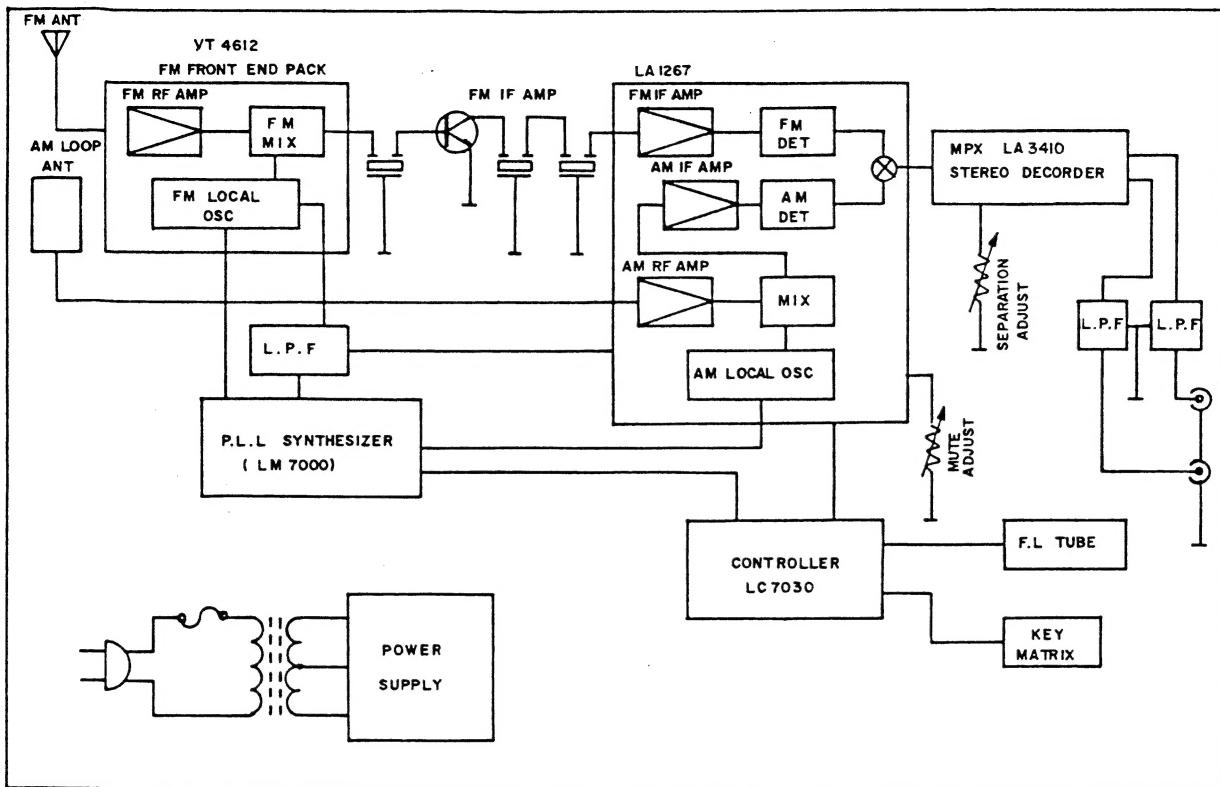
AM IF

15

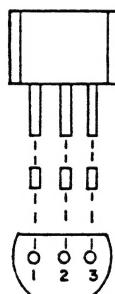
### 3. ALIGNMENT INSTRUCTION

( ) : LW 3BAND

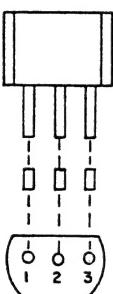
FM, RF, IF, ALIGNMENT										
STEP	SIGNAL SOURCE	SET SIGNAL TO	ALIGNMENT INDICATOR	SET INDICATOR TO	ADJUST	REMARK				
	CONNECT TO		CONNECT TO							
1	FM SIGNAL GEN	MHz MODULATED WITH 1KHz	DC. VOLT METER	87.5 MHz	L2 (FM OSC COIL)	ADJUST L FOR $1.5 \pm 0.1$ AT TP2 TO CHASSIS GND				
	FM ANT TERMINAL		TP1							
2	FM SIGNAL GEN	MHz MODULATED WITH 1 KHz	DC. VOLT METER	108.1MHz (908MHz)	NOT ADJUST	CHECKED $8.5V \pm 0.1$ AT TP TO CHASSIS GND				
	FM ANT TERMINAL		TP1							
3	REPEAT STEPS 1 AND 2 OBTAIN FREQUENCY RANGE									
4	CONNECT TUNING METER BETWEEN POINT TP3 AND TP4									
5	FM	98.1MHz (98MHz) MODULATED WITH 1 KHz	TUNING METER	98.1MHz (98MHz)	T205	ADJUST FOR CENTER READING ON TUNING INDICATOR				
	FM ANT TERMINAL		TP3 AND TP4							
6	FM	98.1MHz (98MHz) MODULATED WITH 1 KHz	DISTORTION METER	98.1MHz (98MHz)	T206	ADJUST FOR MINIMUM READING ON. DISTORTION METER				
	FM ANT TERMINAL		FM OUTPUT							
FM MUTTING LEVEL AND SIGNAL LED ADJUSTMENT										
7	FM SSG	98.1MHz (98MHz) MODULATED MODULA	VTVM	98.1MHz (98MHz)	SVR101 (MUTING LEVEL CONTROL)	SIGNAL SOURCE TO 20dB				
	FM ANT TERMINAL		FM OUT PUT							
SEPERATION ADJUSTMENT (SETTING FUNCTION SW FM MODE, STEREO)										
8	FM SSG	98.1MHz (98MHz) STEREO SIGNAL (L + R) (R ONLY)	V.T.V.M	98.1MHz (98MHz)	SVR401 (SEPERATION CONTROL)	ADJUST R310 FOR MAXIMUM SEPARATION				
	FM ANT TERMINAL		FM OUTPUT							
MW LW RF ALIGNMENT										
9	AM SSG	522kHz	DC VOLT METER	522kHz	T203 (MW OSC COIL)	ADJUST T203 FOR $0.8V \pm 0.1$ AT TP2 TO CHASSIS GND				
	AM ANT TERMINAL		TP 1 (TP2)							
10	AM SSG	1611KHz	DC VOLT METER	1611KHz	C217 (MW OSC TRIMMER)	ADJUST CT213 FOR $9V \pm 0.1$ AT TP2 TO CHASSIS GND				
	AM ANT TERMINAL		TP 1 (TP2)							
11	REPEAT STEPS 9 AND 10 TO OBTAIN FREQUENCY RANGE									
12	AM SSG	153 kHz	DC VOLT METER	153 kHz	T204 LW OSC COIL	ADJUST T204 FOR $0.8V \pm 0.1$ AT TP2 TO CHASSIS GND				
	AM ANT TERMINAL		TP2							
13	AM SSG	360kHz	DC VOLT METER	360 kHz	C212 (LW OSC TRIMMER)	ADJUST CT212 FOR $9V \pm 0.1$ AT TP2 TO CHASSIS GND				
	AM ANT TERMINAL		TP2							
14	REPEAT STEPS 12 AND 13 TO OBTAIN FREQUENCY RANGE									
AM IF ALIGNMENT										
15	AM IF SWEEP GEN	SWEEP CENTERED 450kHz	OSCILLOSCOPE	(MIN. FREQ)	T208 T207	MAXIMUM GAIN AND SYMMETRY CURVE				
	AM ANT TERMINAL		AM DET OUTPUT							



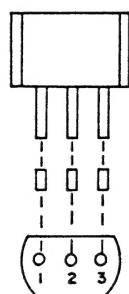
## 9. TR AND IC LEAD LAYOUT



Q1 . Q101 . Q102  
 Q203 . Q204 . Q501  
 Q502 . Q503 . Q401 . Q451  
 Q703 ~ Q721



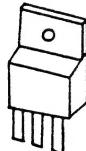
Q201 . Q202



Q701 . Q702

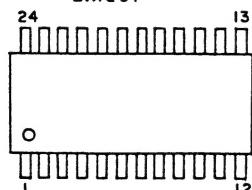
IC 501

L78M12

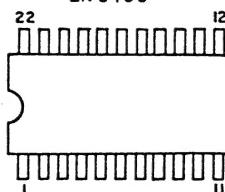


SIDE VIEW  
 L78M12  
 IC 501

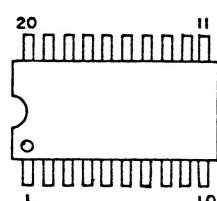
IC 201  
 LA1267



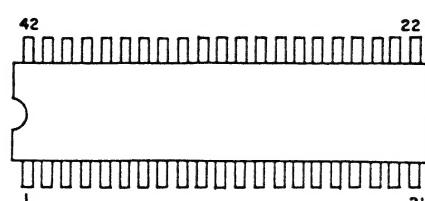
IC 401  
 LA 3400



IC 701  
 LM7000



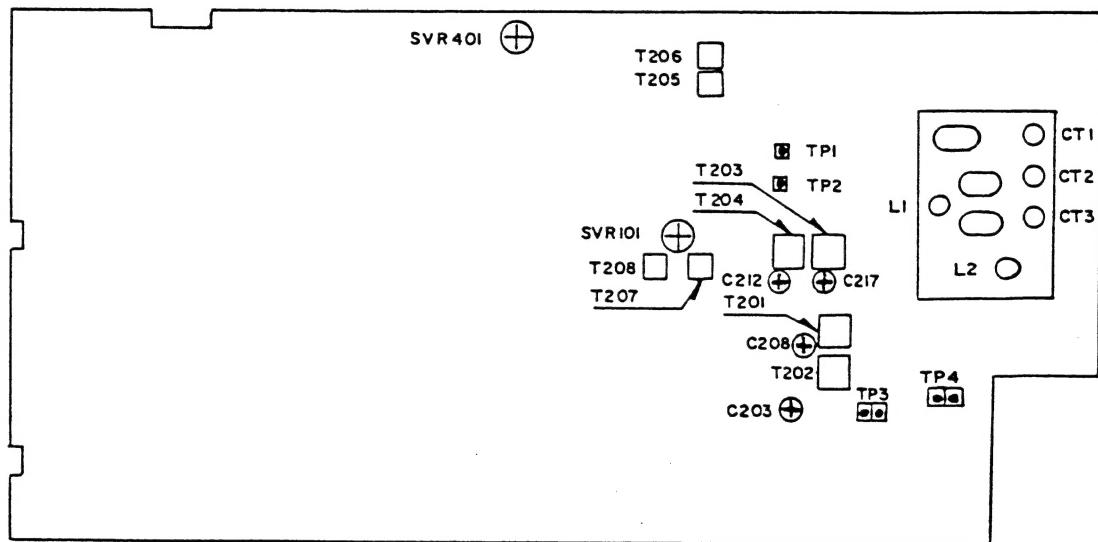
IC 702  
 LC7030



## MW, LW, RF ALIGNMENT

STEP	SIGNAL SOURCE	SET SIGNAL TO	ALIGNMENT INDICATOR	SET INDICATOR TO	ADJUST	REMARK
	CONNECT TO		CONNECT TO			
16	AM SIGNAL GEN	603 kHz	V.T.V.M	603 kHz	T201 MW (ANT COIL)	MAXIMUM GAIN
	AM ANT TERMINAL		AM DET. OUTPUT			
17	AM SIGNAL GEN	1404 kHz	V.T.V.M	1404 kHz	C208 MW (ANT TRIMMER)	MAXIMUM GAIN
	AM ANT TERMINAL		AM DET. OUTPUT			
18	REPEAT STEPS 16 AND 17 FOR MINIMUM CHANGE					
19	AM SIGNAL GEN	175 kHz	V.T.V.M	175 kHz	T202 LW (ANT COIL)	MAXIMUM GAIN
	AM ANT TERMINAL		AM DET. OUTPUT			
20	AM SIGNAL GEN	320 kHz	V.T.V.M	320 kHz	C203 LW (ANT TRIMMER)	MAXIMUM GAIN
	AM ANT TERMINAL		AM DET. OUTPUT			
21	REPEAT STEPS 19 AND 20 FOR MINIMUM CHANGE					

## 4. ALIGNMENT POINT LOCATION



L1: FM IFT

L2: FM OSC COIL

CT1: FM 90MHz SENSITIVITY (NOT ADJUST)

CT2: FM 98MHz SENSITIVITY (NOT ADJUST)

CT3: FM 106MHz SENSITIVITY (NOT ADJUST)

T205: DETECTOR COIL (TUNING ADJUST)

T206: DETECTOR COIL (DISTORTION ADJUST)

T203: MW OSC COIL

T204: LW OSC COIL

C212: LW OSC TRIMMER

C217: MW OSC TRIMMER

T201: MW ANT COIL

T202: LW ANT COIL

C208: MW ANT TRIMMER

C203: LW ANT TRIMMER

T207, 208: MW(LW) IFT

SVR401: SEPARATION CONTROL

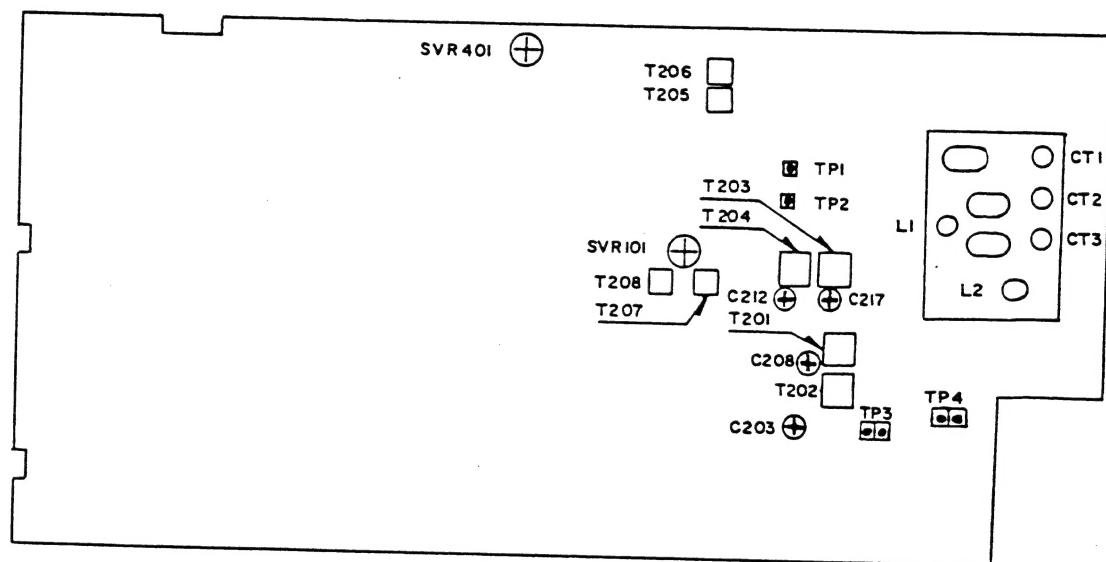
SVR101: MUTING LEVEL CONTROL

ZEILE	POSITION	SYM. BEZEICHNUNG	ET-NUMMER	ANZ
1				
2		NF-VERB.KABEL 2X CINCH JE SEITE	997 609 3	001
3		FM-WURFANTENNE 75 OHM-ANSCHLUSS	965 604 2	001
4		FM-DIPOLANTENNE 300 OHM	741 923 7	001
5				
6		GEHAEUSE UND BEDIENTEILE :		
7				
8	1	KLARSICHTSCHEIBE	741 942 7	001
9	2	ABDECKSCHEIBE,DISPLAY	741 944 3	001
10	3	FILTERSCHEIBE,DISPLAY	741 943 5	001
11	4	KNOPF,MONO-STEREO	741 930 2	001
12	5-1	KNOPF,FM	741 939 3	001
13	5-2	KNOPF,LW	741 940 1	001
14	5-3	KNOPF,MW	741 941 9	001
15	6	KNOPF,TUNING	741 929 4	001
16	7	KNOPF,POWER	741 896 5	001
17	8	FEDER	741 893 2	001
18	9	FRONTBLENDE	741 924 5	001
19	12-0	KNOPF,MEMORY	741 927 8	001
20	12-1	KNOPF,1	741 931 0	001
21	12-2	KNOPF,2	741 932 8	001
22	12-3	KNOPF,3	741 933 6	001
23	12-4	KNOPF,4	741 934 4	001
24	12-5	KNOPF,SEARCH	741 928 6	001
25	12-6	KNOPF,5	741 935 1	001
26	12-7	KNOPF,6	741 936 9	001
27	12-8	KNOPF,7	741 937 7	001
28	12-9	KNOPF,8	741 938 5	001
29	20	CINCHBUCHSE	734 921 0	001
30	21	RUECKWAND	741 926 0	001
31	23	HALTER FUER FERRITANTENNE	734 927 7	001
32	25	FERRITANTENNE	734 928 5	001
33	29	ANSCHLUSSBUCHSE 13-PIN	741 911 2	001
34	30	LAUTSPRECHERBUCHSENLEISTE	734 920 2	001
35	33	GEHAEUSE-OBERTEIL	741 925 2	001
36	35	NETZTRAFO	741 921 1	001
37	37	FUSS	741 889 0	001
38	38	STOPPEN FUER FUSS	741 888 2	001
39	46	FEDER	741 894 0	001
40				
41		ELEKTRISCHE TEILE :		
42				
43		NETZTRAFO	741 921 1	001
44		CINCHBUCHSE	734 921 0	001
45	MONO-STERE	TASTSCHALTER	741 922 9	001
46	NETZ	SCHALTER	741 882 5	001
47		TAKT-SCHALTER	740 001 3	001
48	TUNER I	UKW-TEIL	734 887 3	001
49		FERRITANTENNE	734 928 5	001
50	CFI01-103	FM-KERAMIKFILTER	986 820 9	001
51	CF201	AM-KERAMIK-FILTER AHCM2-450 BL	734 979 8	001
52	CF202	AM-KERAMIK-FILTER BFU 450C-4N	734 980 6	001
53	D201	CAP.-DIODE KV 1236 Z1	733 388 3	001
54	D205,735	LED SLB 25 DU	741 915 3	001
55	D402	LED SLB 25 MG GRUEN	741 914 6	001
56	D501-504	DIODE 1 N 4002	921 523 7	001
57	D505	Z-DIODE RD 5,6 EBI	965 944 2	001
58	D506	ZENERDIODE RD 24 FB 3	954 413 1	001
59	D512,513	DIODE 1 N 4148	175 540 4	001
60	D701	DIODE 1 N 4148	175 540 4	001
61	FL701	DISPLAY FIP7C8D	734 281 9	001
62	IC201	IC LA 1267	734 938 4	001
63	IC401	IC LA 3410	741 872 6	001
64	IC501	IC NJM 78 M 12	985 474 6	001
65	IC701	IC LM 7000	734 970 7	001
66	IC702	IC LC 7030	734 971 5	001
67	L	SPULE 470 UH	741 986 4	001
68	L	SPULE 10 UH	741 987 2	001
69	LF401,451	LOW-PASS-FILTER	734 990 5	001
70	Q101	TRANSISTOR 2 SC 838	175 507 3	001
71	Q102	TRANSISTOR 2 SA 733 P	275 032 1	001
72	Q201,202	TRANSISTOR 2 SC 2240 BL	950 910 0	001
73	Q203,204	TRANSISTOR 2 SC 945	175 739 2	001
74	Q401,451	TRANSISTOR 2 SC 945	175 739 2	001
75	Q501-503	TRANSISTOR 2 SA 733 P	275 032 1	001
76	Q701,702	TRANSISTOR 2 SK 583	734 975 6	001
77	Q703	TRANSISTOR 2 SC 945	175 739 2	001
78	Q704-717	TRANSISTOR 2 SA 733 P	275 032 1	001
79	Q720	TRANSISTOR 2 SA 733 P	275 032 1	001
80	Q721	TRANSISTOR 2 SC 945	175 739 2	001
81	T201	MW-ANTENNEN-FILTER	734 984 8	001

## MW. LW. RF ALIGNMENT

STEP	SIGNAL SOURCE	SET SIGNAL TO	ALIGNMENT INDICATOR	SET INDICATOR TO	ADJUST	REMARK
	CONNECT TO		CONNECT TO			
16	AM SIGNAL GEN	603 kHz	V.T.V.M	603 kHz	T201 MW (ANT COIL)	MAXIMUM GAIN
	AM ANT TERMINAL		AM DET OUTPUT			
17	AM SIGNAL GEN	1404 kHz	V.T.V.M	1404 kHz	C208 MW (ANT TRIMMER)	MAXIMUM GAIN
	AM ANT TERMINAL		AM DET. OUTPUT			
18	REPEAT STEPS 16 AND 17 FOR MINIMUM CHANGE					
19	AM SIGNAL GEN	175 kHz	V.T.V.M	175 kHz	T202 LW (ANT COIL)	MAXIMUM GAIN
	AM ANT TERMINAL		AM DET. OUTPUT			
20	AM SIGNAL GEN	320 kHz	V.T.V.M	320 kHz	C203 LW (ANT TRIMMER)	MAXIMUM GAIN
	AM ANT TERMINAL		AM DET. OUTPUT			
21	REPEAT STEPS 19 AND 20 FOR MINIMUM CHANGE					

## 4. ALIGNMENT POINT LOCATION



L1: FM IFT

L2: FM OSC COIL

CT1: FM 90MHz SENSITIVITY (NOT ADJUST)

CT2: FM 98MHz SENSITIVITY (NOT ADJUST)

CT3: FM 106MHz SENSITIVITY (NOT ADJUST)

T205: DETECTOR COIL (TUNING ADJUST)

T206: DETECTOR COIL (DISTORTION ADJUST)

T203: MW OSC COIL

T204: LW OSC COIL

C212: LW OSC TRIMMER

C217: MW OSC TRIMMER

T201: MW ANT COIL

T202: LW ANT COIL

C208: MW ANT TRIMMER

C203: LW ANT TRIMMER

T207, 208: MW(LW) IFT

SVR401: SEPARATION CONTROL

SVR101: MUTING LEVEL CONTROL

ZEILE	POSITION	SYM BEZEICHNUNG	ET-NUMMER	ANZ
82	T202	LW-ANTENNEN-FILTER	734 985 5	001
83	T203	FM-OSZILLATORSPULE	741 918 7	001
84	T204	LW-OSZILLATORSPULE	741 945 0	001
85	T205	FM-ZF-FILTER	741 917 9	001
86	T206	FM-ZF-FILTER	741 916 1	001
87	T207	AM-ZF-FILTER	741 919 5	001
88	T208	AM-ZF-FILTER	741 920 3	001
89	X401	LOW-PASS-FILTER	734 989 7	001
90	X702	QUARZ 7,2 MHz	733 233 1	001

ENDE

## Notizen